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| 10/699,359 | 10/30/2003 | Aditya Mohan | 200208216-1 | 2528 |

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
3404 E. Harmony Road
Mail Stop 35
FORT COLLINS, CO 80528

| EXAMINER | |
|---|---|
| BIAGINI, CHRISTOPHER D | |
| ART UNIT | PAPER NUMBER |
| 2445 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
ipa.mail@hp.com
laura.m.clark@hp.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/699,359 | MOHAN ET AL. | |
| | Examiner | Art Unit | |
| | CHRISTOPHER BIAGINI | 2445 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 May 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20 and 24-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 24-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

This communication is in response to the amendment filed May 24, 2011. Claims 1-20 and 24-27 are pending.

Note: This application has been assigned to a new examiner. Contact information is available at the end of this action.

### *Response to Arguments*

Applicant's arguments with respect to the rejections of claims 24-25 under 35 USC 112, second paragraph and claims 16-20 under 35 USC 101 have been fully considered and are persuasive in light of the amendments. Accordingly, the rejections are withdrawn.

Applicant's arguments with respect to the rejections under 35 USC 103(a) have been fully considered and are persuasive. Accordingly, the rejections are withdrawn. However, upon further consideration, new grounds of rejection are made.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 24-25 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Independent claim 24 is directed to a "system" comprising a "network interface" and a "processor." These terms are broad enough to encompass software interfaces and a software processor. Accordingly, the claim may be broadly but reasonably construed to encompass software *per se*. Software *per se* is not a process, machine, manufacture, or composition of matter within the meaning of 35 USC 101.

Claim 25, which depends from claim 24, is rejected under a similar rationale because the additionally recited limitations do not exclude embodiments which consist entirely of software.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-15 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 8, it is not clear whether the limitation "processing unit" is intended to invoke 35 USC 112, sixth paragraph. The element is recited in functional terms, but does not use the phrase "means for" or "step for." If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant may:

(a) Amend the claim to include the phrase "means for" or "step for". The phrase "means for" or "step for" must be modified by functional language, and the phrase or term must **not** be modified by sufficient structure, material, or acts for performing the claimed function; or

(b) Present a sufficient showing that the claim limitation is written as a function to be performed and the claim does **not** recite sufficient structure, material, or acts for performing the claimed function to preclude application of 35 U.S.C. 112, sixth paragraph. For more information, see MPEP § 2181.

Claims 9-15 are rejected for at least incorporating the deficiencies of claim 8.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Claims 8-10 and 24 are rejected under 35 U.S.C. 102(a) as being anticipated by Rhea ("Probabalistic Location and Routing," a copy of which is provided herewith).**

Regarding claim 8, Rhea shows a system comprising:

- a plurality of data processors coupled via a peer-to-peer network arrangement (see section II, first paragraph, on p. 1249), each data processor including;

- a network interface arranged to provide one or more respective connections with one or more associated data processor of the peer-to-peer network arrangement, the connections formed using an incentive-based criteria (comprising the necessary component which connects to neighbors based on network latency: see section II, first paragraph, on p. 1249 and paragraph spanning pages 1251-1252);
- a memory for storing one or more respective remote Bloom filters representing data accessible via the associated connections (see section B, first pargraph, on p. 1249); and
- a processing unit arranged to:
    - form a query Bloom-filter based on a data query (see section C, first paragraph, p. 1250, as well as section A, first paragraph, p. 1249, describing that the query is matched by hashing the element to be checked, which amounts to a Bloom filter for the set containing only that element);
    - for a given node of the plurality of nodes, evaluate other nodes of the plurality of nodes that connected to the given node based on the Bloom-filters and the incentive-based criteria to select one or more of the other nodes to propagate a search expression (see section C, first paragraph, on p. 1250, describing that the evaluation is based on both filter matches and network latency);
    - select a subset of the connections as a function of the query Bloom-filter and the respective remote Bloom-filters associated with the connections (see section C, first paragraph, p. 1250); and

- send the data query to the subset of the connections (the subset consisting of the neighbor with lowest latency: see section C, first paragraph, p. 1250).

Regarding claim 9, Rhea shows the limitations of claim 8 as applied above, and further shows wherein at least one data processor of the plurality of data processors further includes a local data storage adapted for storing data objects (e.g., documents in the form of "replicas"; note that "servers publish the fact that they are *storing* a replica [emphasis added]": see section II. B. on p. 1249 and middle of left column of p. 1252).

Regarding claim 10, Rhea shows the limitations of claim 9 as applied above, and further shows wherein the memory of the at least one data processor is configured for storing a local Bloom-filter representing data accessible via the local data storage (see section D on p. 1250, describing that servers have their "own filter").

Regarding claim 24, Rhea shows a system comprising:

- a network interface to connect to one or more nodes of a peer-to-peer network (see section II, first paragraph, on p. 1249) based on an incentive-based criteria, the nodes storing remote Bloom-filters associated with respective peer-to-peer data connections (comprising the necessary component which connects to neighbors based on network latency: see section II, first paragraph, on p. 1249 and paragraph spanning pages 1251-1252); and the Bloom filters indicating data

accessible via the respective peer-to-peer data connections (see section B, first pargraph, on p. 1249); and

- a processor adapted to:
    - form a query for locating one or more data objects stored on the network nodes (see section C, first paragraph, p. 1250, as well as section A, first paragraph, p. 1249);
    - for a given node of the plurality of nodes, evaluate other nodes of the plurality of nodes that connected to the given node based on the Bloom-filters and the incentive-based criteria to select one or more of the other nodes to propagate the search expression (see section C, first paragraph, on p. 1250, describing that the evaluation is based on both filter matches and network latency); and
    - cause the search expression to be propagated to the selected nodes (see section C, first paragraph, p. 1250).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**Claims 1-3, 6, 7, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhea in view of Prinkey ("An Efficient Scheme for Query Processing on**

**Peer-to-Peer Networks," a copy of which is provided herewith), and further in view of Dutta (US Pub. No. 2003/0050980).**

Regarding claim 1, note that the preamble has been given patentable weight as it is relied upon by the body of the claim.

Rhea shows a processor-implemented method for searching for a data object in a plurality of nodes forming a peer-to-peer network (see section II, first paragraph, p. 1249), the method comprising:

- forming Bloom-Filters at the nodes as a function of data available via the nodes (see section B, p. 1249);
- communicating Bloom-filter information between peer-to-peer coupled nodes of the peer- to-peer network (see section D, p. 1250) that have formed connections using incentive-based criteria to control whether one node connects to another node (see section II, first paragraph, p. 1249 and paragraph spanning pages 1251-1252);
- forming a search expression for locating the data object (see section C, first paragraph, p. 1250);
- for a given node of the plurality of nodes, evaluating other nodes of the plurality of nodes that connected to the given node based on the Bloom-filters and the incentive- based criteria to select one or more of the other nodes to propagate the search expression (see section C, first paragraph, on p. 1250, describing that the evaluation is based on both filter matches and network latency);

- propagating the search expression to said selected one or more of the other nodes (see section C, first paragraph, p. 1250).

Rhea does not explicitly show communicating the Bloom filters themselves (rather, Rhea only explicitly describes sending diff-compressed updates).

Prinkey shows communicating Bloom filters to update other nodes (e.g., bit masks representing the hashed index of a node: see first three paragraphs under "Content-based Query Routing on p. 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rhea to communicate the Bloom filters to other nodes as taught by Prinkey in order to provide greater reliability, by ensuring that a node's local index remains valid even if it occasionally misses an update message.

Rhea in view of Prinkey does not explicitly show outputting a result of the search expression from nodes that satisfy the search expression.

Dutta shows outputting a result of a search expression from nodes that satisfy the search expression (see [0054]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rhea in view of Prinkey with the outputting taught by Dutta in order to inform a user of the results.

Regarding claim 2, Rhea in view of Prinkey and Dutta shows the limitations of claim 1 as applied above, and further shows wherein forming respective Bloom filters at the nodes includes combining Remote Bloom-filters (RBFs) received from peer- to-peer coupled nodes of the

respective nodes (see Rhea, section II-B, p. 1249; see also Prinkey, third paragraph under "Content-based Query Routing" on p. 7, as combined above).

Regarding claim 3, Rhea in view of Prinkey and Dutta shows the limitations of claim 1 as applied above, and further shows wherein selecting the nodes includes forming a query Bloom-filter based on the search expression and comparing the query Bloom-filter to the respective Bloom-filters (see Rhea, section C, first paragraph, p. 1250, as well as section A, first paragraph, p. 1249, describing that the query is matched by hashing the element to be checked, which amounts to a Bloom filter for the set containing only that element).

Regarding claim 6, Rhea in view of Prinkey and Dutta shows the limitations of claim 1 as applied above, and further shows *storing* local Bloom filters (see section D on p. 1250, describing that servers have their "own filter"), but does not explicitly show forming the respective Bloom filters at the nodes includes *forming* the respective Bloom filters as a function of a local Bloom-filter based on data locally accessible by the respective nodes.

Prinkey forming respective Bloom filters as a function of a local Bloom-filter based on data locally accessible by the respective nodes (see Prinkey, third paragraph under "Content-based Query Routing" on p. 7).

It would have been obvious to further modify the system of Rhea in view of Prinkey and Dutta with the forming of Bloom filters as a function of locally accessible data as taught by Prinkey in order to ensure nodes consider their own content when making routing decisions.

Regarding claim 7, Rhea in view of Prinkey and Dutta shows the limitations of claim 1 as applied above, but does not explicitly show wherein the peer-to-peer network comprises a Gnutella network.

Dutta shows a peer-to-peer network comprising a Gnutella network (see [0035]).

It would have been obvious to one of ordinary skill in the art to further modify the system of Rhea in view of Prinkey and Dutta with the Gnutella network taught by Dutta in order to improve compatibility with existing Gnutella clients, thereby speeding adoption of the system.

Regarding claim 26, Rhea in view of Prinkey and Dutta shows the limitations of claim 1 as applied above, and further shows wherein the incentive-based criteria comprises a criteria based on a network performance measure (e.g., latency: see Rhea, section II, first paragraph, on p. 1249 and paragraph spanning pages 1251-1252).

Regarding claim 27, Rhea in view of Prinkey and Dutta shows the limitations of claim 26 as applied above, and further shows wherein the network performance measure comprises one or more of the following: a connection bandwidth, a latency and a reliability (e.g., latency: see Rhea, section II, first paragraph, on p. 1249 and paragraph spanning pages 1251-1252).

**Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhea in view of Prinkey and Dutta (US Pub. No. 2003/0050980) as applied to claim 3 above, and further in view of Lee (US Pub. No. 2002/0120814).**

Regarding claim 4, the combination of Rhea in view of Prinkey and Dutta shows the limitations of claim 3 as applied above, and further shows wherein comparing the query Bloom-filter to the respective Bloom-filters includes forming a ranking associated with respective Bloom-filters based on the matching of bits with the respective Bloom-filter (the ranking comprising choosing matching nodes over non-matching nodes for forwarding the query: see Rhea, section C, first paragraph, p. 1250, as well as section A, first paragraph, p. 1249).

The combination does not explicitly show that the ranking is associated with a sum of bits of the query Bloom-filter.

Lee shows ranking matches based on a sum of bits of a matching filter (e.g., a bit mask: see [0029], describing selecting entries based on which has the most consecutive bit matches).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rhea in view of Prinkey and Dutta with the sum-based ranking taught by Lee in order to make use of partial matches between the filters.

Regarding claim 5, the combination of Rhea in view of Prinkey and Dutta shows the limitations of claim 3 as applied above, and further shows wherein comparing the query Bloom-filter to the Bloom-filters includes forming a ranking associated with respective Bloom-filters based on the matching of bits with the respective Bloom-filter (the ranking comprising choosing matching nodes over non-matching nodes for forwarding the query: see Rhea, section C, first paragraph, p. 1250, as well as section A, first paragraph, p. 1249).

The combination does not explicitly show that the ranking is associated with a count of bits of the query Bloom-filter.

Lee shows ranking matches based on a sum of bits of a matching filter (e.g., a bit mask: see [0029], describing selecting entries based on which has the most consecutive bit matches).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rhea in view of Prinkey and Dutta with the sum-based ranking taught by Lee in order to make use of partial matches between the filters.

**Claims 11-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhea in view of Prinkey.**

Regarding claim 11, Rhea shows the limitations of claim 8 as applied above, but does not explicitly show wherein the processing units of the data processors are further arranged to publish a Bloom-filter to a selected connection of the one or more connections, the Bloom-filter representing data accessible via the respective data processors. (Rather, Rhea only explicitly describes sending diff-compressed updates.)

Prinkey shows publishing a Bloom-filter to a selected connection of one or more connections, the Bloom-filter representing data accessible via a respective data processor (e.g., a bit mask representing the hashed index of a node logically OR'd with the bitmasks of its hosted nodes: see first three paragraphs under "Content-based Query Routing on p. 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rhea to communicate the Bloom filters to other nodes as taught by Prinkey in order to provide greater reliability, by ensuring that a node's local index remains valid even if it occasionally misses an update message.

Regarding claim 12, the combination of Rhea and Prinkey shows the limitations of claim 11 as applied above, and further shows wherein the Bloom filter is formed as a logical OR of the remote Bloom filters of the respective data processors except for the remote Bloom filter associated with the selected connection (see Prinkey, as combined above, third paragraph under "Content-based Query Routing" on p. 7, describing that only bitmasks for hosted nodes are OR'd together; that is, the bitmask for a node's host is not included).

Regarding claim 13, the combination of Rhea and Prinkey shows the limitations of claim 11 as applied above, and further shows wherein at least one data processor of the plurality of data processors further includes a local data storage adapted for storing data, and the memory of the at least one data processor is configured for storing a local Bloom-filter representing data accessible via the respective local storage (see Rhea, section D on p. 1250, describing that servers have their "own filter"; and Prinkey, third paragraph under "Content-based Query Routing" on p. 7, as combined above).

Regarding claim 14, the combination of Rhea and Prinkey shows the limitations of claim 13 as applied above, and further shows wherein the Bloom filter is formed as a logical OR of: the local Bloom-filter; and the remote Bloom filters of the respective data processor except for the remote Bloom filter associated with the selected connection (see Prinkey, as combined above, third paragraph under "Content-based Query Routing" on p. 7, describing that only bitmasks for hosted nodes are OR'd together; that is, the bitmask for a node's host is not included).

Regarding claim 16, Rhea shows a computer-readable non-transitory storage medium having instructions stored thereon which are executable on a processor for performing steps comprising:

- forming one or more respective peer-to-peer connections with one or more network peers of the processor using an incentive-based criteria (see section II, first paragraph, p. 1249 and paragraph spanning pages 1251-1252);
- receiving respective remote Bloom-filter information representing data accessible by associated peer-to-peer connections (see section D, p. 1250); forming a query Bloom filter based on a data query (see section C, first paragraph, p. 1250, as well as section A, first paragraph, p. 1249, describing that the query is matched by hashing the element to be checked, which amounts to a Bloom filter for the set containing only that element);
- for a given node, evaluating other nodes connected to the given node to select nodes to propagate a search expression associated with the query based on incentive-based criteria and one or more respective remote Bloom filters (see section C, first paragraph, on p. 1250, describing that the evaluation is based on both filter matches and network latency);
- selecting a subset of the peer-to-peer connections as a function of the query Bloom-filter and the respective remote Bloom filters associated with the peer-to-peer connections connections (the subset consisting of the neighbor with lowest latency: see section C, first paragraph, p. 1250); and

- sending the data query to the subset of the connections (see section C, first paragraph, p. 1250).

Rhea does not explicitly show receiving the Bloom filters themselves (rather, Rhea only explicitly describes sending diff-compressed updates).

Prinkey shows communicating Bloom filters to update other nodes (e.g., bit masks representing the hashed index of a node: see first three paragraphs under "Content-based Query Routing on p. 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Rhea to communicate the Bloom filters to other nodes as taught by Prinkey in order to provide greater reliability, by ensuring that a node's local index remains valid even if it occasionally misses an update message.

Regarding claim 17, the combination of Rhea and Prinkey shows the limitations of claim 16 as applied above, and further shows wherein the steps further include forming a local Bloom-filter based on data accessible via a local data storage of the processor (see Rhea, section D on p. 1250, describing that servers have their "own filter"; and Prinkey, third paragraph under "Content-based Query Routing" on p. 7, as combined above).

Regarding claim 18, the combination of Rhea and Prinkey shows the limitations of claim 16 as applied above, and further shows wherein the steps further include sending a Bloom-filter to a selected peer-to-peer connection of the one or more peer-to-peer connections indicating data

accessible via the processor (see Prinkey, as combined above, first three paragraphs under "Content-based Query Routing" on p. 7).

Regarding claim 19, the combination of Rhea and Prinkey shows the limitations of claim 18 as applied above, and further shows wherein the Bloom filter is formed as a logical OR of the remote Bloom filters of the processor except for the remote Bloom filter associated with the selected peer-to-peer connection (see Prinkey, as combined above, third paragraph under "Content-based Query Routing" on p. 7, describing that only bitmasks for hosted nodes are OR'd together; that is, the bitmask for a node's host is not included).

**Claims 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhea in view of Dutta (US Pub. No. 2003/0050980).**

Regarding claim 15, Rhea shows the limitations of claim 8 as applied above, but does not explicitly show wherein the peer-to-peer network arrangement includes a Gnutella network arrangement.

Dutta shows a peer-to-peer network including a Gnutella network arrangement (see [0035]).

It would have been obvious to one of ordinary skill in the art to modify the system of Rhea with the Gnutella network taught by Dutta in order to improve compatibility with existing Gnutella clients, thereby speeding adoption of the system.

Regarding claim 25, Rhea shows the limitations of claim 24 as applied above, but does not explicitly show wherein the peer-to-peer data connections utilize a Gnutella protocol.

Dutta shows peer-to-peer data connections utilizing a Gnutella protocol (see [0035]).

It would have been obvious to one of ordinary skill in the art to modify the system of Rhea with the Gnutella network taught by Dutta in order to improve compatibility with existing Gnutella clients, thereby speeding adoption of the system.

**Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rhea in view of Prinkey as applied to claim 16 above, and further in view of Dutta (US Pub. No. 2003/0050980).**

Regarding claim 20, Rhea in view of Prinkey shows the limitations of claim 16 as applied above, but does not explicitly show wherein the peer-to-peer connections utilize a Gnutella protocol.

Dutta shows peer-to-peer data connections utilizing a Gnutella protocol (see [0035]).

It would have been obvious to one of ordinary skill in the art to modify the system of Rhea in view of Prinkey with the Gnutella network taught by Dutta in order to improve compatibility with existing Gnutella clients, thereby speeding adoption of the system.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- "Query Routing for the Gnutella Network" by Rohrs describes the process by which the Gnutella protocol routes query messages.
- "Speculative Routing and Update Propagtion: A Kundali Centric Approach" (from the Intelligent Enterprise Systems Laboratory, HP Laboratories Palo Alto) by Aditya Mohan and Vana Kalogeraki describes a Bloom-filter-based query routing system. Note that this document was published on the Hewlett-Packard website at least as of 17 October 2002, as evidenced by the enclosed printout from the Internet Archive. The printout was archived on 17 October 2002, and shows a link to the full PDF version of the document.
- "Speculative Routing and Update Propagtion: A Kundali Centric Approach" (from the IEEE International Conference on Communications) by Aditya Mohan and Vana Kalogeraki describes a Bloom-filter-based query routing system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER BIAGINI whose telephone number is (571)272-9743. The examiner can normally be reached on weekdays from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher D. Biagini/
Primary Examiner, Art Unit 2445